

WHAT IS CLAIMED IS

1. A low voltage differential signaling transmitting circuit comprising:

5       a driver circuit configured to output currents as differential signals from a pair of output terminals of the driver circuit in accordance with a digital signal input through an input terminal of the driver circuit;

10       a bias circuit configured to supply the driver circuit with a bias current, said bias current adjusting values of the currents output from the driver circuit;

      a current/voltage conversion circuit configured to convert the currents output from the pair of output terminals of the driver circuit into voltages; and

15       a receiver circuit configured to compare the voltages with each other and output a signal representing a result of the comparison;

      wherein said bias circuit and the current/voltage conversion circuit are arranged on a same semiconductor chip.

20

2. The low voltage differential signal transmitting circuit as claimed in claim 1, wherein said bias circuit and the current/voltage conversion circuit are formed by a same semiconductor manufacturing process.

25

3. A low voltage differential signal transmitting circuit comprising:

a driver circuit configured to output currents as differential signals from a pair of output terminals of the driver circuit in accordance with a digital signal input through an input terminal of the driver circuit;

5 a bias circuit configured to supply the driver circuit with a bias current, said bias current adjusting values of the currents output from the driver circuit;

a current/voltage conversion circuit configured to convert the currents output from the pair of output terminals  
10 of the driver circuit into voltages; and

a receiver circuit configured to compare the voltages with each other and output a signal representing a result of the comparison;

wherein said bias circuit and the current/voltage  
15 conversion circuit are formed by a same semiconductor manufacturing process.

4. The low voltage differential signal transmitting circuit as claimed in any one of claims 1 to 3, wherein the  
20 driver circuit is formed on a semiconductor chip, and said bias circuit, the current/voltage conversion circuit and the receiver circuit are formed on another semiconductor chip.

5. The low voltage differential signal transmitting  
25 circuit as claimed in any one of claims 1 to 3, wherein said driver circuit, the bias circuit, and the current/voltage conversion circuit are formed on a semiconductor chip, and

the receiver circuit is formed on another semiconductor chip.

6. The low voltage differential signal transmitting circuit as claimed in any one of claims 1 to 3, wherein said driver circuit is formed on a first semiconductor chip, and the bias circuit and the current/voltage conversion circuit are formed on a second semiconductor chip, and the receiver circuit is formed on a third semiconductor chip.

7. The low voltage differential signal transmitting circuit as claimed in claims 5, wherein at least said driver circuit, the bias circuit, the current/voltage conversion circuit and the receiver circuit collectively form a multiple module.

8. An optical disc recording apparatus connected to a host device, said optical disc recording apparatus comprising:

an encoding device configured to encode writing use data input from the host device into a data signal; and

a semiconductor laser driving control device configured to control driving of a semiconductor laser, said semiconductor laser being irradiated to the optical disc in accordance with the data signal;

wherein an output circuit is provided in said encoding device, an input circuit is provided in said semiconductor laser driving control device, and said output and input

circuits collectively form a LVDS circuit, said LVDS circuit including:

5 a driver circuit configured to output currents as differential signals from a pair of output terminals of the driver circuit in accordance with a digital signal input through an input terminal of the driver circuit;

a bias circuit configured to supply the driver circuit with a bias current, said bias current adjusting values of the currents output from the driver circuit;

10 a current/voltage conversion circuit configured to convert the currents output from the pair of output terminals of the driver circuit into voltages; and

a receiver circuit configured to compare the voltages with each other and output a signal representing a result of the comparison;

15 wherein said bias circuit and the current/voltage conversion circuit are formed on a same semiconductor chip.

9. The optical disc recording apparatus as claimed in claim 8, wherein said bias circuit and the current/voltage conversion circuit are formed by a same semiconductor manufacturing process.

10. An optical disc recording apparatus connected to a host device, said optical disc recording apparatus comprising:

an encoding device configured to encode writing use data

input from the host device into a data signal; and

a semiconductor laser driving control device configured to control driving of a semiconductor laser irradiated to an optical disc in accordance with the data signal;

5        wherein an output circuit is provided in said encoding device, an input circuit is provided in said semiconductor laser driving control device, and said output and input circuits collectively form a LVDS circuit, said LVDS circuit including:

10        a driver circuit configured to output currents as differential signals from a pair of output terminals of the driver circuit in accordance with a digital signal input through an input terminal of the driver circuit;

15        a bias circuit configured to supply the driver circuit with a bias current, said bias current adjusting values of the currents output from the driver circuit;

a current/voltage conversion circuit configured to convert the currents output from the pair of output terminals of the driver circuit into voltages; and

20        a receiver circuit configured to compare the voltages with each other and output a signal representing a result of the comparison;

25        wherein said bias circuit and the current/voltage conversion circuit are formed by a same semiconductor manufacturing process.

11. The optical disc recording apparatus according to

any one of claims 8 to 10, wherein the driver circuit is formed on a semiconductor chip, and said bias circuit, the current/voltage conversion circuit and the receiver circuit are formed on another semiconductor chip.

5

12. The optical disc recording apparatus according to any one of claims 8 to 10, said driver circuit the bias circuit, and the current/voltage conversion circuit are formed on a semiconductor chip, and the receiver circuit is formed on  
10 another semiconductor chip.

13. The optical disc recording apparatus according to any one of claims 8 to 10, wherein said driver circuit is formed on a first semiconductor chip, the bias circuit and the  
15 current/voltage conversion circuit are formed on a second semiconductor chip, and the receiver circuit is formed on a third semiconductor chip.

14. The optical disc recording apparatus according to  
20 any one of claims 8 to 10, wherein at least said driver circuit, the bias circuit, the current/voltage conversion circuit and the receiver circuit collectively form a multiple module.

15. The low voltage differential signal transmitting  
25 circuit of claim 6, wherein at least said driver circuit, the bias circuit, the current/voltage conversion circuit and the receiver circuit collectively form a multiple module.